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THE IMPACT OF THE APPLICATION OF ARTIFICIAL INTELLIGENCE ON THE ECONOMIC PERFORMANCE OF THE INSTITUTION

Abstract. *Our study aims to know the impact of the application of artificial intelligence on the economic performance of the institution, by studying the relationship between the application of artificial intelligence and economic performance indicators represented in the rate of profit development and the rate of development of services provided to the customer, as our study was projected on the Onpassive institution during the period (2018-2023), Using the multiple linear regression method through the statistical program (EVIEWS9), the study finally concluded that there is a relationship between the application of artificial intelligence and the rate of development of profits, and the existence of a positive relationship between the application of artificial intelligence and the rate of development of services provided to the customer.*
Keywords: *Artificial intelligence, economic performance, economic performance indicators, United Arab Emirates.*

Introduction

Artificial intelligence (Acemoglu, 2011) represents the most important output of the fourth industrial revolution due to its versatility in the military, industrial, economic and technical fields, medical, educational and service applications. (Aghion, 1997) With the massive and rapid technological development and the changes the world is witnessing in light of the fourth industrial revolution (Antonin, 2017), artificial intelligence will be the engine of progress, growth and prosperity during the next few years, and it and its innovations can establish a new world that may It now seems like a fantasy.

In addition to the great economic opportunities provided by artificial intelligence (Stefano, 2018) to many economic sectors in the country (Nick, 2005), and its ability to achieve huge profits while applying its uses and relying on the information and advice it provides, and its effects in reducing dependence on the human element. and employment, (Autor, 2017), which raises the quality of products and reduces spending. (Benhamou, 2018) and to promote the development and acceleration of the activation of artificial intelligence applications (Agrawal, 2017), at all levels of government and private, many countries have adopted many mechanisms, including the development and development of specialized scientific competencies and local capabilities in the field of artificial intelligence, (Cockburn, 2018) and training Institutional employees by involving them in specialized courses in data science, and creating a culture of artificial intelligence among groups of society to facilitate the spread of the use of applications that depend on these technologies and create a digital citizen who is able to deal with them, (Cohen, 2018) and enhance the concerted efforts of institutions to raise awareness of the basics of this field, In addition to the previous effects of artificial intelligence (Fujii, 2018), its application has effects on the social, economic and financial performance in the organization (Luis, 2014).

Whatever resources are available to the economic unit of various resources, it can only be exploited through rational, developed and good management, to represent a centered axis with knowledge and to measure the extent of failure and success of the economic units in their decisions

and the results they reached and the missed opportunities in order to determine their future plans. Except by evaluating its performance, especially economic performance (Aghion, 2014), as it is considered a means of predicting the position that the institution will be in in the future.

The importance of the research is embodied in the importance of the economic performance of the economic units in the use of economic resources to achieve their objectives (Commander, 2011), where the economic performance of the Onpassive institution is evaluated, through a set of economic indicators to know the efficiency of the institution's performance and its ability to exploit the resources and productive capacities available to it, as well The research aims to show the impact of the reflection of the application of economic intelligence on economic performance, through the application in the Unpassive Foundation and using indicators related to economic performance during the period 2018-2023.

The research is based on a main hypothesis that the application of artificial intelligence is reflected in the statement of its impact on economic performance through a set of economic indicators.

Literature Review

Here we review some concepts and terminology, as well as studies on the subject of our study.

1. Artificial intelligence

A term that has increased in use recently in light of the technical renaissance that the world has witnessed in the field of developing machines. (Furman, 2018) We can briefly say that artificial intelligence (Cruz, 2002) is a branch of science that is concerned with machines that can solve the kind of problems that humans resort to when solving them to their intelligence.

Often, the term "artificial intelligence" (Gadam, 2018) is not associated with machines as a whole, but rather with computer programs that are installed on these devices, which are characterized by certain behavior and characteristics that make them simulate the mental capabilities of humanity (Grabher, 2017) and their work patterns. Artificial intelligence applications can be divided into several areas, including artificial intelligence in games, proving theories of logic and mathematics, image recognition, and machine learning (Logg, 2018).

2. Economic performance

With regard to economic performance, (Kaufmann, 2002), it represents the ability of the economic institution to gain the trust of shareholders and customers, and this performance is measured through the information contained in the financial statements. In formulating its strategy and improving its level of performance, in order to support its decisions and develop its future plans (Knack, 1995).

Nelson and Sambat (2001) identified three different uses of enterprises as a variable affecting economic performance. First, there is the Game Approach Rule (1990, 1994). In fact, this approach is implied in Coase (1960) and focuses on the influence of institutions on transactions between economic actors. In this approach, organizations are well-understood rules of the game which may or may not guarantee some degree of predictability of the behavior of individuals or firms. To the extent that institutions are conducive to predictability, they encourage contracting between economic actors (Alam, 2020).

The second approach to foundations is related to Williamson (1975, 1985), but again was first put forward by Coase (1937). In this approach, organizations are "governance structures" rather than "rules of the game". The focus here is on ownership structures, hierarchies, company culture, or agency problems. The question that this approach addresses is the following: How do institutions enable economic actors to avoid the outcomes of the prisoners' dilemma or prevent the failure of collective action in their repeated interactions? One way organizations can help solve such problems is the guarantee they provide of well-defined property rights (Coase, 1937). Another way is through statutory or voluntary governance standards that can mitigate agency problems, in which agents (public or private actors) act against the interests of the managers (citizens, consumers, stakeholders, etc.) who appoint them to carry out a particular task. The difference between this approach and the previous one may not be obvious, but it can be articulated as follows: 'institutions

as governing structures' are a system of rules that enable economic actors to avoid agency problems or prisoner's dilemma situations that may arise when 'institutions as rules of the game' Either ineffective or absent (Ali, 2021).

The third approach to institutions is related to Axelrod (1984). In his comprehensive analysis of cooperation, Axelrod explores how cooperation can emerge in a world of self-interested actors (great powers, corporations, or individuals) when there is no central authority to monitor their actions. He notes the importance of internal norms that encourage cooperative behavior within large groups that, according to Olson (1971 and 1982), have teamwork problems that prevent them from cooperating. Within this framework, organizations can solve information and sanctions problems in a decentralized manner (Dixit, 2008). In this framework, the institutions are more or less informal and emerge as a result of repeated actions indicating information about potential business partners or a succession of partners when the latter cheat.

Methods

The current study was conducted at the level of Onpassive Foundation.

ONPASSIVE is an IT company focused solely on building a one-stop business solution. The organization aims to bring innovation, provide value, and maximize business potential with less effort and greater impact. The company was established in 2018. The company's headquarters are in Dubai, United Arab Emirates, specifically in Burj Khalifa. The company has headquarters in the United States of America, India, Singapore, Bangladesh and Egypt as well.

ONPASSIVE provides specialized business solutions by augmenting human intelligence with artificial intelligence. Its mission is to open up new possible ways for leaders around the world to start their businesses in the places they care about. The fully automated platform provides easy business solutions to create a successful enterprise. It helps business owners to hack their growth with the help of its in-house AI tools designed by the dedicated team.

ONPASSIVE provides exceptional AI solutions and services adhering to globally recognized standards and leading technology trends. Companies can benefit from the platform and achieve business goals, thus leading them to success.

It has highly AI-optimized business solutions and services for a wide range of industry areas. Some of its major services include Business Development, Automation Tools, Corporate Digital Transformation, Seamless Connectivity, Business Process Management, Complete Business Infrastructure Tools, Website Designing, Digital Marketing Services and Multiple Corporate Smart Tools.

The market-level model definition is used by the VAR applications in marketing that were mentioned in the preceding section. For the sake of this research, we assume that the data at hand provide a model formulation at a higher disaggregate (store) level. specified at the store-level. Additionally, we consider T (the time period) to be rather vast (Beck, 2001).

The following structure describes a generic VAR model of order P for cross section i (i 1, N):

$$A_{i,0} Y_{i,1} = \alpha_i \oplus \sum_{t=1}^{p} A_{i,t} Y_{i,t=1} \oplus u_{i,t} \tag{1}$$

Where Ait is a k k matrix containing the immediate response parameters for t 0, and the delayed reaction parameters for t 1, 2, (Beck, 2001) and P for cross-sectional unit i, and Yit is a k-dimensional vector of endogenous variables of cross section i at time t. The cross-section-specific intercept vector i.i.d. ai and the disturbance term uit both have the form uit N (0, i), where i is often taken to be diagonal. The VAR model's structural representation for cross section i looks like this (Bemmaor, 1999).

Equation (1) may be multiplied with any nonsingular k k matrix to provide a representation of the process that is equivalent. By pre-multiplying Equation (1) with A, the model is simplified to the following form, which is as follows:

$$Y_{i,t} \equiv \beta_I \oplus \sum_{t=1}^{p} C_{i,t} Y_{i,t=1} \oplus \varepsilon_{i,t} \tag{2}$$

The Equation (2)'s model has P k parameters. Additionally, compared to the estimation of the same number of parameters in a typical econometric model, VAR estimation processes depend on asymptotics in T for consistency of the parameter estimates, necessitating even more observations. Therefore, a common issue in applications of VAR models is a lack of degrees of freedom, which leads to inaccurate estimation outcomes (Binder, 2001).

For the third modeling strategy, we presum that cross-section specific intercepts may adequately represent the cross-sectional variability. We focus on Fixed Effect Models (FEMs), (Box 1994) which have fully pooled other parameters but a cross-section-specific intercept. We define the unit-by-unit models in Equation (2)'s FEM analog as:

$$Y_{i,t} \equiv \beta_i \oplus \sum_{i=1}^{p} C_i Y_{i,t=1} \oplus \varepsilon_{i,t} \tag{3}$$

where ci t i.i.d. N(0,1) exists. Specified in log-log form, the VAR model incorporates sales response functions. For these equations, a shop-specific intercept may account for variations in sales brought on, for instance, by store size. The FEM may capture adequate cross-sectional heterogeneity while maintaining a high degree of freedom if it is plausible to assume that consumers of the various stores respond to promotional activities with the same elasticity.

As for the economic performance index, where two indicators were used in this study, the profit development index, which is measured by the difference between the profit of the current year and the previous year divided by the profit of the previous year, and the rate of services provided to customers, it is measured by the difference between the volume of services provided in the current year and the volume of Services provided in the previous year, divided by the volume of services provided in the previous year.

Results

By observing Figure 1, we find that the profit rate has witnessed a significant increase in all its components, as it was estimated in the year 2019 at 1.5 million dollars, to reach the year 2020 at a value of 2.2 million dollars, in the year 2021 it was estimated at 2.73 million dollars, in the year 2022 it was estimated at 3.01 million dollars, to reach 3.94 million dollars. The continuity of the rate of profits in increasing indicates the continuation of the institution in raising the level of its system, and the optimal exploitation of its available energies, while continuing to raise the efficiency and effectiveness of its activities.
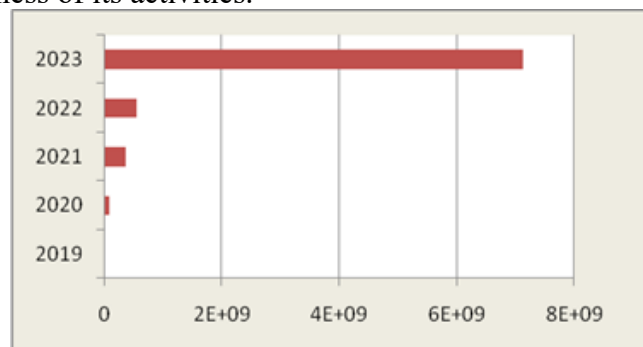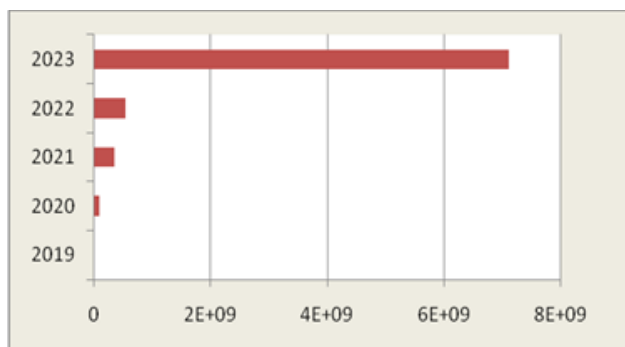

Figure 1. Evolution of the onpassive profit rate
Source: own calculations in IVIEWS24

By observing Figure 2, we find that the rate of services provided to customers has witnessed a significant increase in all its components, as it was estimated in 2019 at 8,878,994, to reach in 2020 a value of 98,029,409, in 2021 it was estimated at 362,396,283, and in 2022 it was estimated at 55,216,1980, to reach 7120716645, the continuous increase in the rate of services provided to customers indicates the continued ability of the institution to perform the service required of it in an accurate and reliable manner, and to work on the ease and facilitation of obtaining service from the customer.

Through the results shown in Table 1, it is noted that the level of artificial intelligence is statistically significant because its probabilistic value amounted to 0.0356 less than the significance level of 0.05, and the value of the R-squared determination coefficient is 0.593623, meaning that

the application of artificial intelligence explains its value of 59.3623%, from Changes in the rate of profit development.

Figure. 2. Evolution of the rate of services provided to customers in the onpassive institution
Source: own calculations in IVIEWS24

As for the probability value of the Fisher Prob (F-statistic), it is estimated at 0.012351, which is less than the level of significance 0.05, which means that the estimated model is significant, and from it there is a statistically significant effect, and this confirms the validity of the hypothesis that indicates the existence of The impact of the application of artificial intelligence on the rate of profit development.

Table1
Measuring the effect of applying artificial intelligence on the rate of profit development

Variables	coef	T-test	p
C	9.56879	2.369874	0.0458
AI	1.254698	2.357896	0.0356
R-squared	0.593623	F-statistic	0.026145
R-squared Adjuste	0.352388	Prob (F-statistic)	0.012351

Through the results shown in Table 2, it is noted that the level of artificial intelligence is statistically significant because its probability value amounted to 0.0256 less than the significance level of 0.05, and the value of the R-squared determination coefficient is 0.498763, meaning that the application of artificial intelligence explains its value of 49.8763%. From the changes in the rate of services provided to customers, and the probability value of the Fisher Prob (F-statistic) is estimated at 0.025469, which is less than the level of significance 0.05, which means that the estimated model is significant, and from it there is a significant statistically significant effect, and this confirms the validity of the hypothesis that indicates There is an impact of the application of artificial intelligence on the rate of services provided to customers.

Table 2
**Measuring the effect of applying artificial intelligence on the rate
of services provided to customers**

Variables	coef	T-test	p
C	8. 265789	3.569874	0.0458
AI	1.259947	2.635498	0.0256
R-squared	0.498763	F-statistic	0.0125487
R-squared Adjuste	0.248764	Prob (F-statistic)	0.025469

Conclusion
The field of application of artificial intelligence is a wide field (Ponce, 2018) and it is divided into many different applications and is used in many fields, including the economic field. that he enjoys.

Through our applied study, the Onpassive Foundation uses artificial intelligence in the operations of managing and conducting its various activities, as these applications differ from one institution to another according to the type of activity of the institution, as the application of artificial intelligence within the Onpassive institution contributed to facilitating the operations of managing its activities, and the application of artificial intelligence within the institution also contributed Onpassive in providing great assistance to employees in the completion of their tasks, due to its superior ability to carry out the most difficult tasks. Thanks to the application of artificial intelligence, the Onpassive Corporation has achieved the best results while providing the best services to the customer, and this is what contributes to the development and prosperity of the organization, and enhances its competitiveness in a modern economic world. and evolution.

The application of artificial intelligence within the Onpassive Foundation also helped to shorten the time due to its speed and accuracy in completing the required tasks.

The application of artificial intelligence within the Onpassive Corporation also contributed to improving the economic performance of the organization, as it had an impact on improving and developing the rate of profits, as well as the development of the rate of services provided to the customer.

Recommendations:

- The need for the organization's management centers to pay attention to the concept of artificial intelligence and the user behavior, training and development processes.

- Adopting policies and procedures that increase the level of workers' awareness of the importance of artificial intelligence by holding training courses for its employees.

Updating and developing artificial intelligence programs used to enable different departments to take appropriate decisions at the right time.

- Educating institutions on the need to use artificial intelligence applications in managing the activities of institutions, especially those of an economic nature.

- Benefiting from these applications as much as possible in the operations of running institutions and trying to make them create added value for the institution.

- Allocating a financial cover that allows the purchase of these applications for use by institutions, because of their positive return on the profitability of institutions

- Encourage scientific research in this field and establish centers equipped for this research to develop local competencies and benefit from them as much as possible.

Conflicts of Interest: The authors declare that no potential conflicts of interest in publishing this work. Furthermore, the authors have witnessed ethical issues such as plagiarism, informed consent, misconduct, data fabrication, double publication or submission, and redundancy.

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